

CLAIMS

1       1. A comparator for use with a time-temperature indicator, the time-temperature indicator  
2       having an active portion having an initial color and which undergoes chemical changes as  
3       time elapses and at a rate related to the temperature of the surrounding environment  
4       wherein the chemical changes produce changes in the color of the active portion, the  
5       comparator comprising:

6       a support member; and  
7       a plurality of comparator stages located on the support member, each comparator  
8       stage comprising a first portion having a reference color and a second portion  
9       having a predetermined color that is the same as one of the colors to which the  
10      active portion of the time-temperature indicator changes, the colors of the second  
11      portions of the comparator stages darkening in a progressive manner such that the  
12      predetermined color of the second portion of a first one of the comparator stages  
13      is substantially lighter than the reference color of the first stage and the  
14      predetermined color of the second portion of a last one of the comparator stages is  
15      substantially darker than the reference color of the last comparator stage.

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1       2. The comparator according to claim 1 further comprising indicia formed on the support  
2       member to facilitate identification of each stage.

1       3. The comparator according to claim 1 wherein the first portion and second portion are  
2       adjacent to each other.

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1       4. The comparator according to claim 1 wherein the first portion is located within the  
2       perimeter of the second portion.

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1       5. The comparator according to claim 1 wherein the second portion is located within the  
2       perimeter of the first portion.

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1       6. The comparator according to claim 1 wherein the first and second portions are  
2       substantially circular in shape, the first portion having a diameter greater than the  
3       diameter of the second portion, the first and second portions being concentrically  
4       arranged.

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1       7. The comparator according to claim 1 wherein each comparator stage further includes a  
2       base region surrounding the first and second portions.

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1       8. The comparator according to claim 7 wherein each base region has a substantially  
2       square shape.

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1       9. The comparator according to claim 7 wherein each base region has a color that is the  
2       same as the color of the second portion of the first comparator stage.

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1       10. The comparator according to claim 1 wherein the support member is substantially  
2       planar.

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1       11. The comparator according to claim 1 wherein the support member is fabricated  
2       from cardboard.

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1       12. The comparator according to claim 1 wherein each of the comparator stages is  
2       attached to the support member.

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1       13. The comparator according to claim 1 wherein each of the comparator stages is  
2       printed on the support member.

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1       14. The comparator according to claim 1 wherein each of the comparator stages  
2       comprises a label having an adhesive backing, each of the comparator stages being  
3       adhered to the support member.

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1 15. The comparator according to claim 1 wherein the plurality of comparator stages  
2 comprises six (6) comparator stages.

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1 16. A comparator for use with a time-temperature indicator, the time-temperature  
2 indicator having an active portion having an initial color and which undergoes chemical  
3 changes as time elapses and at a rate related to the temperature of the surrounding  
4 environment wherein the chemical changes produce changes in the color of the active  
5 portion, the comparator comprising:

6 a substantially planar support member; and

7 a plurality of comparator stages printed on the support member, each comparator  
8 stage comprising a first portion having a reference color and a second portion  
9 having a predetermined color that is the same as one of the colors to which the  
10 active portion of the time-temperature indicator changes, the first and second  
11 portions being substantially circular shaped, the second portion having a diameter  
12 that is less than the diameter of the first portion, the first and second portions  
13 being concentrically arranged, the colors of the second portions of the comparator  
14 stages darkening in a progressive manner such that the predetermined color of the  
15 second portion of a first one of the comparator stages is substantially lighter than  
16 the reference color of the first stage and the predetermined color of the second  
17 portion of a last one of the comparator stages is substantially darker than the  
18 reference color of the last comparator stage; and

19 whereby a user of the comparator compares the color of the active portion of the time-  
20 temperature indicator to each comparator stage to determine if the color of the  
21 active portion is the same as the color of the second portion of any of the  
22 comparator stages.

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1 17. A method of determining the time-temperature condition of a food product having  
2 applied thereto a time-temperature indicator, the indicator having an active portion having  
3 an initial color and which undergoes chemical changes as time elapses and at a rate  
4 related to the temperature of the surrounding environment wherein the chemical changes  
5 produces changes in the color of the active portion, the method comprising the steps of:  
6 (a) providing a comparator comprising support member, and a plurality of  
7 comparator stages located on the support member, each comparator stage  
8 comprising a first portion having a reference color and a second portion having a  
9 predetermined color that is the same as one of the colors to which the active  
10 portion of the time-temperature indicator changes, the colors of the second  
11 portions of the comparator stages darkening in a progressive manner such that the  
12 predetermined color of the second portion of a first one of the comparator stages  
13 is substantially lighter than the reference color of the first stage and the  
14 predetermined color of the second portion of a last one of the comparator stages is  
15 substantially darker than the reference portion of the last comparator stage;

16 (b) comparing the color of the active portion of the time-temperature indicator to the  
17 predetermined color of the second portion of each comparator stage;  
18 (c) selecting the comparator stage having the second portion with the predetermined  
19 color that matches the color of the active portion of the time-temperature  
20 indicator; and  
21 (d) correlating the comparator stage selected in step (c) to a particular time-  
22 temperature condition.

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1 18. The method of claim 17 wherein selecting step (c) further comprises the steps of:  
2 determining if the shade of the color of the active portion of the time-temperature  
3 indicator is between the shades of the colors of the second portions of adjacent  
4 comparator stages; and  
5 selecting from the pair of adjacent comparator stages the stage having the second  
6 portion with the lighter shade of color if it is determined that the shade of the  
7 color of the active portion of the time-temperature indicator is between the shades  
8 of the colors of the second portions of adjacent comparator stages.

1 19. The method according to claim 17 wherein the comparator further includes indicia  
2 located adjacent to each comparator stage to facilitate identification of each comparator  
3 stage, the selecting step (c) comprised of the step of selecting the indicia that identifies

4 the comparator stage that has the second portion with the predetermined color that  
5 matches the color of the active portion of the time-temperature indicator.

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1 20. The method according to claim 19 wherein correlating step (d) further comprises  
2 the step of correlating the indicia of the selected comparator stage to a particular time-  
3 temperature condition.